

ANDREW CHU

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EDUCATION

University of Waterloo

Bachelor of Computer Science - Dean's Honours List

Expected Dec. 2028

Waterloo, ON

SKILLS

Languages: Java, Python, C/C++, JavaScript, TypeScript, CSS, HTML, Go, Dart, Sass

Frameworks: React, Flask, TailwindCSS, SvelteKit, Firebase, Express, MongoDB, Jest, FastAPI, Next, MySQL, Supabase

Developer Tools: GCP, Linux, Git, GitHub, Node, Figma, Docker, AWS, VS Code, Postman, WSL, Vite, Vercel, Cursor

EXPERIENCE

Data Engineer Intern

Aug. 2024 - Sep. 2024

Alljoined

Toronto, ON

- Responsible for data preprocessing, **brainwave data collection pipeline**, and quality validation of collected data
- Identified a crucial timing issue in **EEG data preprocessing** by implementing a benchmarking system in **Python**
- Refactored **WebSocket** code to optimize data collection performance by **99%**, reducing latency to **10 ms**.
- Denoised collected data by performing artifact correction using **NumPy**, **Pandas**, and **scikit-learn** libraries

Full-Stack Developer

Sep. 2022 - Jan. 2023

Digitera Interactive

Ottawa, ON

- Contributed to the "Skule News" project, a **mobile school news app** to streamline student communication
- Reduced frequency of in-app crashes by **20%** by resolving **6+** bugs resulting from incorrect **Firebase** queries
- Engineered **image preview feature** when uploading or editing articles in **Flutter**, enhancing user experience
- Designed and tested **Firebase Rules** to provide secure database access for a **role-based access control system**

Logistics Lead

Sep. 2023 - Jun. 2024

YRHacks

Richmond Hill, ON

- Coordinated logistics for a 24-hour hybrid hackathon, accommodating **300+ high school participants**
- Ensured seamless event execution by managing event communication between hackers, volunteers, and the team
- Mentored 20+ participants in **Chrome API**, **Git** and **Python**, enhancing their coding skills and project outcomes

PROJECTS

andrewchu.ca - Personal Portfolio | *Next.js, TailwindCSS, React, Vercel, JSON Web Tokens*

Jan. 2025

- Developed a **personal portfolio website** showcasing 16+ projects with project tag filtering and keyword search
- Boosted **page load performance by 300 ms.** using prerendering, lazy loading, and view transitions API
- Engineered secure password-protected routes using server-side components, server actions, and **JWT** tokens

EasyMeet - Meetup Scheduling Website | *React, Firebase, Mocha, GitHub Actions, CI/CD, Figma*

Jan. 2025

- Shipped a no-password mobile-first **meetup scheduling website** written in **React**, deployed at **easymeet.ca**
- Designed and tested **NoSQL Cloud Firestore** to protect user data from illegitimate database read and writes
- Automated **CI/CD** unit testing and deployment with build caching using **Mocha**, **Chai** and **GitHub Actions**

Workout Tracker - MERN Workout Tracking Website | *MongoDB, Express.js, React, Node, JavaScript, JWT*

Dec. 2024

- Developed a workout tracker full-stack application that allows users to log their workouts and track their progress
- Architected scalable REST API backend with **MVC** pattern, integrating **JWT** for authentication and validating **CRUD** endpoint reliability with **Postman**
- Developed modular and maintainable React components using context providers, custom hooks, and reducers, enabling scalable future development

Baseline - EEG Fatigue Tracker | *Python, FastAPI, SciPy, NumPy, MNE, Matplotlib, React, Jupyter*

Oct. 2024

- Developed Baseline, a **neurotech application that determines fatigue levels** in real-time by analyzing EEG data
- Achieved **2nd Place** in "**Best in Neurotech**" category at Hack49 among 120+ participants and 40+ projects
- Designed **data transformation pipeline** converting large misformatted brain data files into processable chunks

Eyedentify | *Python, Flask, React, MediaPipe, RESTful APIs*

Mar. 2023

- Developed a **facial recognition attendance tracker** capable of labeling multiple people from a single picture
- Achieved **2nd Place Overall** and "**Best Web App**" at YRHacks 2023 among **350+ participants**
- Implemented a **REST API** using **Flask** to analyze photos sent from a responsive **React** dashboard application